

# Quiz #12

Math 1100-05, Fall 2005

(10 points) **Problem.** Let  $f(x, y) = \sqrt{2x - y}$   
 (a) Find  $f(2, 1)$ ,  $f(0, 1)$  and  $f(1, 2)$ .

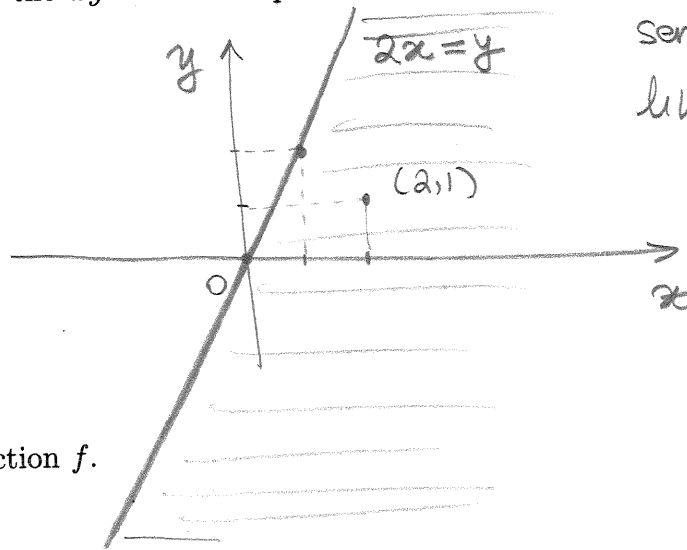
$$f(2, 1) = \sqrt{4 - 1} = \sqrt{3}$$

$$f(0, 1) = \sqrt{-1} = \text{DNE}$$

$$f(1, 2) = \sqrt{2 - 2} = 0$$

(b) Describe the region  $R$  in the  $xy$ -coordinate plane that corresponds to the domain of the function  $f$ .

$$2x - y \geq 0$$



semiplane with the line  $2x = y$  included.

(c) Find the range of the function  $f$ .

$$[0, \infty)$$

(d) Sketch the level curves for  $c = 0, 1, 2$ .

$$\sqrt{2x - y} = 0 \iff 2x = y$$

$$\sqrt{2x - y} = 1 \implies 2x - y = 1$$

$$\sqrt{2x - y} = 2 \implies 2x - y = 4$$

